

The extension of the scope of the Signal Service since its organization in November, 1870, has naturally made it a bureau of record for the great mass of meteorological observations which have been made in the United States. But while much diligence has been shown in the accumulation of records, little effort appears to have been made until the organization of a division of records by the present Chief Signal Officer, in 1887, for their preservation. Indeed, to such an extent was the care and examination of these important records subordinated to the general work of storm and weather forecasting, that the exercise of even ordinary business methods of indexing and filing was neglected.

The gummed stub files in which the records were originally pasted were, moreover, of such unsubstantial structure as to endanger their own preservation, as well as that of their contents, in case of any considerable handling. The Chief Signal Officer's attention was therefore first directed to the systematic arrangement of the records under consideration in properly indexed volumes, and their subsequent binding in a more substantial manner. This duty was satisfactorily performed by the Records Division in 1888, under the supervision of Mr. A. J. Henry, whose industry and intelligence have contributed in a great measure to the orderly arrangement of the files of that division. It was found, however, that in many cases the accumulated records for a single state, when indexed and bound, filled from 15 to 18 large volumes, and that while it was an easy matter to refer to any given report, it became a somewhat laborious proceeding to ascertain the character of data, length of record, location of stations of observation, etc., for the state as a whole. It was also found that with some records of observations in manuscript, some as mean values in printed reports and manuscript, and still others embodied in various forms and reports, there was great danger of overlooking some portion of the records when making a hasty and exhaustive review of the climatic features of any region.

Accordingly, the preparation of the following *preliminary* index of meteorological observations in the United States was undertaken, with a view of presenting in condensed form the essential features in regard to each station of observation of which the Signal Office has cognizance.

In a work of this character, it is, of course, impossible to put forth a compilation free from error, or one that shall be complete in all respects. Indeed, an index which might cover the field of observations at the present writing would be imperfect six months hence, because of the new series of observations which are constantly being brought to the attention of the Signal Office. It was therefore considered advisable to complete the index to January 1, 1890, and to reserve one side of each page for interlineations and explanatory notes.

There will be found in the index a reference to (1) the published results of observations made under the auspices of the Smithsonian Institution, the Patent Office, the Medical Department of the Army, State Weather Services and meteorological societies; (2) the manuscript records of observations in the files of the Signal Office, received from all sources prior to January 1, 1890.

The manuscript records of observations from voluntary and other co-operating observers generally begin with December, 1873, those prior to that year being still in the possession of the Smithsonian Institution.*

The kind and hearty co-operation of the Surgeon General of the Army has afforded the Signal Office a complete file of the valuable reports of observations which for nearly three-quarters of a century have been maintained by that corps of the Army. This pioneer system of meteorological record, beginning in 1819, has continued to the present time, practically without interruption, and is still maintained at a high degree of efficiency.

The only abbreviations used which may need explanation are as follows:

"S. S." indicates a regular station of the Signal Service; the class, as 1st, 2d, or 3d order, being given in the column "Remarks."
 "Riv.," "Rd.," "O. R." indicate, respectively, special river stations, special rainfall stations, and special cotton-region stations.

"V. O.," "W. S.," "R. R." indicate, respectively, (1), voluntary observers reporting direct to the central office in Washington; (2), voluntary observers reporting through the State central office, and (3), stations of the Central and Southern Pacific Railway companies reporting through their headquarters in San Francisco.

"M. D." indicates stations of the Medical Department of the Army reporting monthly through the Surgeon General, U. S. Army.

In the column "Remarks" the significance of the abbreviations "Bar.," "Hyg.," etc., will be understood without explanation. Whenever abbreviations of the above character are given, the manuscript records, are, as a rule, on file in the Signal Office. The words "max." and "min." indicate extremes of temperature from self-registering instruments, in addition to the usual mean values.

The stations of observation have been arranged with reference to their geographical position in each state or territory. Beginning with the northern tier of counties, all stations in that tier have been listed in order from west to east, then the stations in the tier of counties immediately underneath, and in like manner until all stations in the state have been listed. The states and territories have been arranged alphabetically, and the pages in each numbered consecutively; thus the pages in Alabama are numbered 1 to 6, inclusive, California 1 to 18, inclusive, etc. The names of stations having less than a year's observations will be found at the end of the tabulated record for each state or territory.

In the preparation of this index, and in the making of the stencils, there has been room for clerical errors, but the number will be found, comparatively, very small in proportion to the large number of entries. Furthermore, a considerable portion of the index was prepared and in use several months before the remainder, and during this interval some alterations have become necessary.

To present the corrections arising from these sources there has been prepared a table of errata which will be found at the end of the volume. In the preparation of this table full use has been made of the first and second bulletins of the U. S. Board on Geographic Names, and in all cases not yet passed upon by this board, the Official Postal Guide, as corrected to April, 1891, has been accepted as standard.

The form in which the table of errata is presented will be found to facilitate the work of correction, for the correct reading may readily be cut out and pasted over the error as found in the body of the index.

While the central office will derive the greatest benefit from such an index, it will also greatly aid observers in charge of the more important Signal Service stations in their current work, and in the matter of furnishing information to the general public as to character and extent of observations of

* Since writing the foregoing, the custody of the complete manuscript records of meteorological observations in the United States collected by the Smithsonian Institution from 1840 to 1874 has been placed for safe storage in the hands of the Chief Signal Officer through the generous and co-operative spirit of the Secretary of that Institution, Professor S. P. Langley. By this action, practically all of the meteorological records pertaining to the United States have been brought together in one establishment, a result which must seem eminently satisfactory to all students of meteorology and its allied branches.

One important point should be remembered in this connection, viz.: That a majority of the series of observations throughout the index bearing the abbreviation "Sm. Col." to which rainfall and temperature only are credited, contains in addition thereto observations of pressure, wind, weather, and miscellaneous phenomena. Lack of time, however, prevents any attempt at classification for the present.

record for all sections of the country, etc., etc. It is still further aimed to complete, at an early date, a brief card history of each meteorological station, which shall contain much valuable matter not susceptible of being tabulated in a report of this character. Individual research and investigation in the past have no doubt been greatly hindered by a lack of some convenient and reliable record of observations already made. The additional fact that information of this character could be obtained only by application to the Chief Signal Officer has also been an obstacle in the way of those who might have been inclined to devote some time to the elucidation of the many interesting problems connected with the climatology of the country.

It should be the aim of local observers to acquaint those persons likely to become interested in such matters with the work that has been done in their localities and thus stimulate renewed activity on the part of public-spirited citizens, upon whose efforts the Weather Bureau must ever depend for whatever degree of excellence it may attain in the matter of collecting meteorological statistics.

Observers or others receiving this volume are requested to notify the Chief Signal Officer of the omission of any series of observations, reporting at the same time of whom such series can be obtained, whether published or in manuscript, etc., etc.

It remains to acknowledge the services of Mr. George W. Smith and Mr. George A. Warren, clerks of the Records Division, for the industry and intelligence with which they have labored to complete this work.

A. W. GREELY,
Chief Signal Officer.